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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,951	12/19/2001	Xiaoxiao Zhang	CL/V-31599A	6417

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PATENT DEPARTMENT  
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EXAMINER
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LAVARIAS, ARNEL C

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/025,951

Applicant(s)

ZHANG ET AL. 

Examiner

Arnel C. Lavarias

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/29/05, 6/13/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/13/05 has been entered.

### ***Oath/Declaration***

2. The substitute oath or declaration filed 7/29/05 is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). See un-initialed alterations made by inventor Ruolin Li on the signature page.

### ***Response to Amendment***

3. The amendments to the specification of the disclosure in the submission dated 6/13/05 are acknowledged and accepted. In view of these amendments, the objections in Section 7 and 11 of the Office Action dated 3/16/05 are respectfully withdrawn.

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4. The amendments to Claim 1 in the submission dated 6/13/05 are acknowledged and accepted.

***Response to Arguments***

5. The Applicants' arguments filed 6/13/05 have been fully considered but they are not persuasive.
6. The Applicants argue that, with respect to newly amended Claim 1, as well as Claims 2-7 which depend on Claim 1, the combined teachings of Israel and Zhang et al. fail to teach or reasonably suggest the lens allowing a wearer to switch between optical powers. The Examiner respectfully disagrees. In particular, Zhang et al. specifically discloses the ophthalmic lens being a multifocal lens that may be actively switched between two or more optical powers (See Figures 1-2; col. 2, line 66-col. 4, line 13; col. 17, lines 14-26).
7. Claims 1-7 are now rejected as follows.

***Specification***

8. The attempt to incorporate subject matter into this application by reference to U.S. Provisional Application No. 60/258,923 is ineffective because, as per MPEP 608.01(p)(I)(B), an incorporation by reference statement added after an application's filing date is not effective since no new matter can be added to an application after its filing date (See also 35 U.S.C. 132(a)).
9. The incorporation by reference will not be effective until correction is made to comply with 37 CFR 1.57(b), (c), or (d). If the incorporated material is relied upon to meet any

outstanding objection, rejection, or other requirement imposed by the Office, the correction must be made within any time period set by the Office for responding to the objection, rejection, or other requirement for the incorporation to be effective.

Compliance will not be held in abeyance with respect to responding to the objection, rejection, or other requirement for the incorporation to be effective. In no case may the correction be made later than the close of prosecution as defined in 37 CFR 1.114(b), or abandonment of the application, whichever occurs earlier.

Any correction inserting material by amendment that was previously incorporated by reference must be accompanied by a statement that the material being inserted is the material incorporated by reference and the amendment contains no new matter. 37 CFR 1.57(f).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Israel (U.S. Patent No. 6139145), of record, in view of Zhang et al. (U.S. Patent No. 5997140), of record.

Regarding Claims 1-5, Israel discloses an optical lens (See for example 60 in Figures 3-5) comprising at least one holographic optical element (See 66 in Figures 3-5) and at

least one focusing element (See 64 in Figures 3-5), the holographic optical element characterized by an interference fringe pattern (it is noted that holograms are inherently comprised of interference fringe patterns), the holographic optical element further characterized as possessing substantially neutral focusing power (See col. 8, lines 19-46; it is noted that the holographic optical element provides prismatic power), wherein the optical lens is a multifocal lens (See for example Figures 5, 9; col. 3, line 9-col. 6, line 36; col. 8, lines 19-56). Israel additionally discloses the optical lens being biocompatible (See col. 8, lines 1-18), the optical lens being a contact lens (See col. 8, lines 1-18), and the optical lens being a spectacle lens (See col. 8, lines 1-18), the optical lens being an intraocular lens (See col. 8, lines 1-18), and the holographic optical lens element being a transmission holographic optical lens element (See for example col. 3, lines 8-18; col. 9, lines 26-36). Israel lacks the holographic optical element having a finite ray acceptance angle that diffracts up to 100% of incoming light when the Bragg condition is met, or the lens allowing the wearer to switch between optical powers. However, it is well known in the art of holography that only light of a particular range of wavelengths and of a particular range of angle of incidence will be diffracted by the interference fringes on a hologram, and that light outside of these wavelength and angle ranges will transmit through the hologram unmodified. For example, Zhang et al. teaches the use of a holographic optical element as part of an optical/ophthalmic lens (See for example Figures 1-2), such as a multifocal lens (See various figures; col. 2, line 66-col. 3, line 20; col. 17, lines 14-26), wherein the holographic optical element has a finite ray acceptance angle that diffracts up to 100% of incoming light when the Bragg condition is met (See

col. 3, line 21-col. 4, line 23). In addition, Zhang et al. teaches the ophthalmic lens being a multifocal lens that may be actively switched between two or more optical powers (See Figures 1-2; col. 2, line 66-col. 4, line 13; col. 17, lines 14-26). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the holographic optical element of Israel, have a finite ray acceptance angle that diffracts up to 100% of incoming light when the Bragg condition is met, and the lens allowing the wearer to switch between optical powers, as taught by Zhang et al., 1) to provide an active and highly selective means of modifying of the incident light (via diffraction), and 2) to allow for correction of ametropic conditions that are not easily accommodated by conventional corrective optical lenses, without exhibiting any optical interferences from the other optical powers of the lens.

Regarding Claim 6, Israel in view of Zhang et al. discloses the invention as set forth above in Claim 1, except for the holographic optical lens element being a transmission volume holographic optical lens element. However, Zhang et al. additionally teaches that the holographic optical element used as part of an optical lens may be a transmission volume holographic optical lens element (See col. 2, lines 20-36; col. 3, lines 12-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the holographic optical element of Israel in view of Zhang et al. to be a transmission volume holographic optical element, for the purpose of reducing the size (i.e. thickness) of the holographic optical element, while retaining a high degree of diffraction efficiency.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Israel in view of Zhang et al. as applied to Claim 1 above, and further in view of Chang (U.S. Patent No. 4830441), of record.

Israel in view of Zhang et al. discloses the invention as set forth above in Claim 1, except for the holographic optical lens element being a reflective holographic optical lens element. However, it is well known in the art of holography that holographic optical lens elements may be fabricated to operate either in transmission mode or in reflective mode, depending on the holographic writing configuration used (i.e. whether the object and reference beams were incident on the same side or on opposite sides of the holographic recording medium). For example, Chang teaches optical elements for laser eye protection (See for example Abstract; Figure 3), wherein holographic optical elements (See for example 331, 332, 341, 342 in Figure 3) are utilized as part of an optical lens system (See 330, 340 in Figure 3) to provide protection for the eyes from stray laser light. In particular, the holographic optical elements are fabricated (See Figures 1-2) such that the reference and object beams are incident on opposite sides of the holographic recording medium (See 163 in Figures 1-2), such that the holographic optical elements acts as a reflecting element when incident light having a predetermined wavelength(s) and proper incident angle(s) strike the surface of the optical element (See for example col. 7, line 41-col 8, line 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have holographic optical lens element of the optical lens of Israel in view of Zhang et al. be a reflective holographic optical lens element, as taught by Chang, for the purpose of providing



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additional light filtering to protect the optical system and observer from spurious light noise and high light intensity levels.

***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnel C. Lavarias  
Patent Examiner  
Group Art Unit 2872  
2/24/06